JORDAN NARROWS BRIDGE
Crossing Jordan River at 9600 North
Lehi vicinity
Utah County
Utah

HAER No. UT-68

HAER
UTAH
25-LEHI.V,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C St. NW
Washington, DC 20240

HAER
UTAH
25-LEHI.V,
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HISTORIC AMERICAN ENGINEERING RECORD
JORDAN NARROWS BRIDGE

I. INTRODUCTION

Location:	Crossing the Jordan River at 9600 North, Lehi Vicinity, Utah
Quad:	Jordan Narrows
UTM:	A 12/447320/423720 B 12/4472985/423760
Date of Construction:	1914-1915
Present Owner:	Utah County, Utah
Present Use:	Vehicular and pedestrian bridge to be replaced by a new vehicular bridge located nearby. The current bridge will remain to be used as a pedestrian bridge only.
Significance:	The Jordan Narrows bridge is a single-span Pratt through truss bridge built in 1914.
Historian:	Charles E. Hughes, Timpanogos Research Associates, Inc., April 1993

Jordan Narrows Bridge
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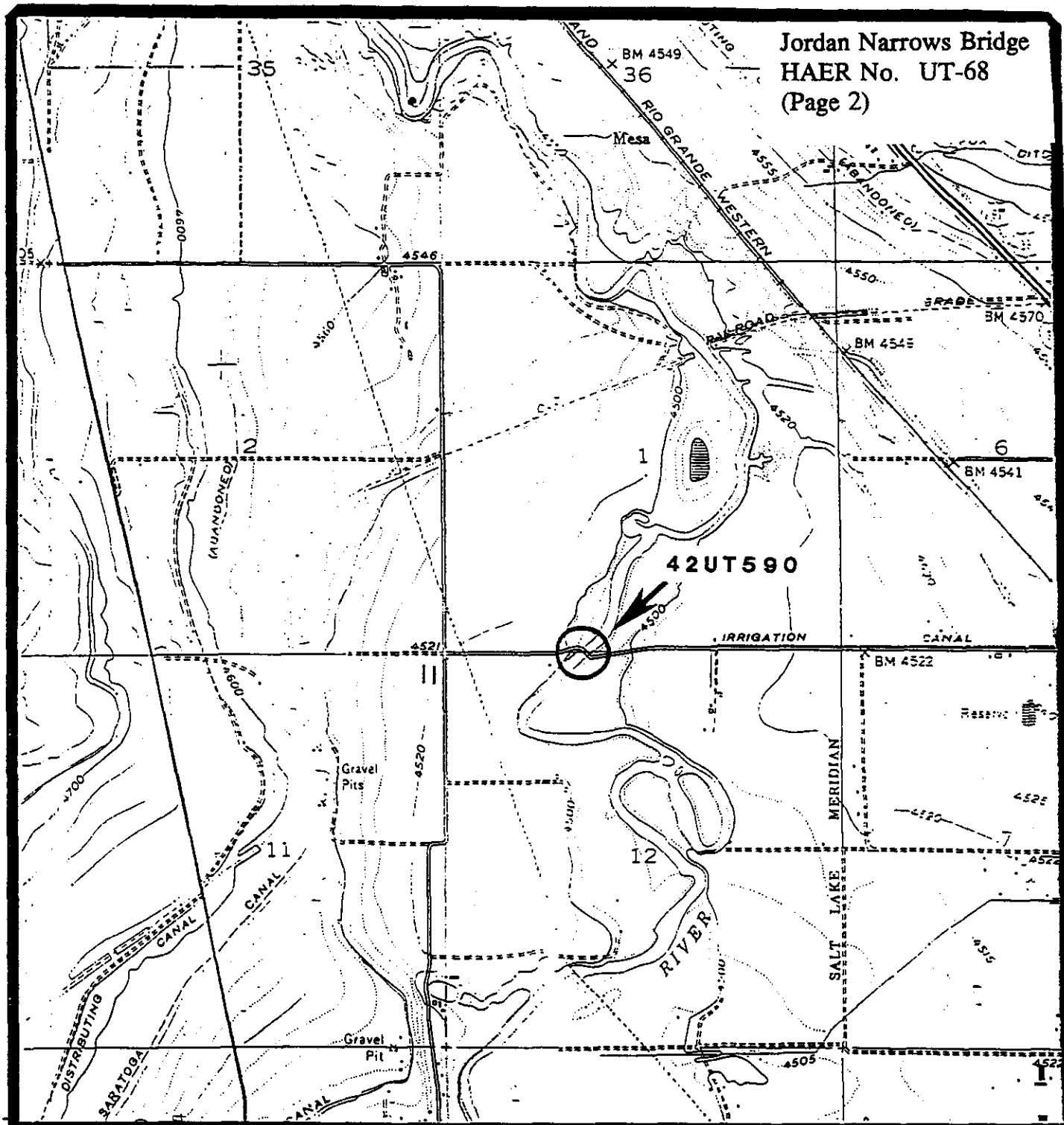

0 1/2 1 Mile

0 .5 1 Kilometer

LEGEND

TIMPANOGOS RESEARCH ASSOCIATES

PROJECT: Jordan Narrows Bridge Replacement

COUNTY: Utah

QUAD: Jordan Narrows, 7.5-minute

T5S R1W

DATE

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II. HISTORY

A. NEED FOR THE BRIDGE

The town of Lehi (population 8,000) is located at the northern end of Utah County approximately twenty miles south of Salt Lake City. It is situated about two miles from the northern end of Utah Lake, the source of the Jordan River. The Jordan River provides the traditional western boundary to the city of Lehi and has created a natural barrier to any western expansion until a series of bridges were erected across the river.

The first organized Anglo-European exploration into the City of Lehi and Utah County was lead by Mormon Apostle Parley P. Pratt in 1847.[1] This first expedition traveled to the banks of Utah Lake and spent many days exploring the colonization and settlement potential of the area.[2] As a result of Pratt's favorable report, Mormon Church leaders in Salt Lake City began to make plans to colonize the Utah County region. In March 1849, the area around the Provo River, about 15 miles to the south of Lehi, became the first area settled in Utah County. Initially, the area around Lehi was considered unfit for settlement because of the lack of irrigation water. However, in the spring of 1850 the first group of settlers located on Dry Creek, land near what today is the Lehi Rodeo grounds, and established the first permanent settlement in Lehi.[3]

One of the settlements first public works projects was the building of a bridge across the Jordan River. To make the extensive cedar groves located on the west side of the river available for firewood and fence posts, a stock company was organized to build a bridge across the Jordan River.[4] Charles and Ezekial Hopkins and Alonzo Rhodes obtained a charter from the territorial legislature on 21 January 1853, which allowed them to construct a bridge and to collect tolls from those using the bridge. Lehi's first public ordinance was the regulation of the tolls for this bridge. This first bridge was located about one mile south of the current 9600 North bridge.

As the size of the Mormon colony in Utah and the West began to grow, communication became a very important concern. Adequate roads became the life blood for many isolated Utah communities. On 18 January 1862, the territorial legislature enacted a poll tax. This law required every male over sixteen years of age and under fifty years to donate two days of labor per

month, at $1.50 per day.[5] This poll tax enabled many roads and bridges to be constructed and greatly improved the lines of communication throughout the territory. In 1860 Brigham Young, requested that cities in northern Utah County supply a work force to upgrade the road across Point of the Mountain, a longstanding bottleneck to traffic heading either north or south from Utah County to Salt Lake County. Men from Lehi supplied over 270 hours of labor.[6]

The first bridge across the Jordan River near Lehi was constructed in 1853. This bridge served as the only route into West Canyon or Pole Canyon, until a downstream ferry was built at Rocky (Indian) Ford in 1860.[7] Sir Richard F. Burton, noted British adventurer, crossed the structure in 1858. He wrote that it was a "rickety affair." Burton complained that "we paid $0.50; had we been Saints the expense would have been half."[8] In 1907 a new steel and concrete bridge was built to replace this "rickety affair." This first bridge in Lehi was demolished in 1985 to allow the U.S. Army Corps of Engineers to dredge and widen the Jordan River. The Jordan Narrows bridge built in 1914-15 was located about one mile to the north. These two bridges were almost identical in design, both Pratt through truss type. Both bridges built in Lehi were owned and maintained by Utah County, paid for with county funds. Utah County still maintains ownership of the Jordan Narrows bridge.

B. CONSTRUCTION OF THE JORDAN NARROWS BRIDGE

A copy of the original blueprint for the bridge is still in existence, located in the Utah County Engineers office in Provo, Utah. The designer of the bridge is not identified other than by his initials D. J. C.. However, through the Utah County Commission minutes and other newspaper accounts the construction history of the bridge can be followed.

At a special session of the Utah County Commission held on Thursday 10 September 1914, the sealed bids for the construction contract to build the Jordan Narrows bridge were opened. Seven companies supplied bids: Provo Foundry and Machine Company, Omaha Structural Steel Works, James J. Burke Company, Levey Construction Company, Midland Bridge Company, Minneapolis Steel and Machinery Company, and Missouri Valley Bridge and Iron Company. The Midland Bridge Company of Kansas City, Missouri was awarded the contract to build the bridge for a low bid price of $4,380.00.[9]

Work was scheduled to begin immediately, however, some problems arose regarding the location and gaining right-of-ways and construction did not begin until March 1915.[10]

Many Lehi residents wanted the bridge located about one half mile to the north of the present location, "near the end of Reeve's lane." The county placed the bridge at this location because they intended to build another bridge north of the interurban (railroad) bridge in the future, once this future bridge was constructed the 9600 North Bridge would be located midway between the old bridge at Cedar Fort road and the interurban bridge.[11] The dispute over the location of the bridge continued for the next few months. A petition was ordered filed by the Utah County Commission containing the signatures of fifty-four residents who wanted the bridge placed in another location to the north.[12]

A decision was finally reached regarding the location of the bridge and construction began at the original Utah County Commission location, near Colledge Road. (9600 North).[13] The agreement worked out to satisfy all parties involved called for the bridge to be erected near the Thomas Colledge farm. One of the deciding factors in the decision of the Commission was a letter they received from Thomas Colledge offering to do a certain amount of work on the road heading west from Lehi if the bridge would be placed near his farm (the original location).[14]

New steel began arriving from Ohio near the end of 1914, and work on the bridge was scheduled to begin soon after the new year. Even though the issue of where to build the bridge had been resolved by the County Commission, the residents living on the west side of the river still wanted the bridge to be located in a different place. Mr. T. Jensen, the supervisor for the Midland Bridge Company, was asked in January 1915, to inspect a new site and report back to the commission regarding the increased cost in building the bridge at a different location. He reported that it would cost an additional $2,000 at which time the Commission decided that the bridge would be built at the original site (Colledge Road).[15]

Work on the bridge officially commenced on Wednesday, March 23, 1915. "Mr. T. Jensen, the foreman for the Midland Bridge Company of Kansas City will have charge of construction work and arrived in Lehi Monday to this purpose. County Surveyor, J. Stewart, with several assistants, came to Lehi Monday and did the necessary preliminary engineering work, running levels,

locating the piers, etc. Teams commenced hauling gravel Tuesday for the concrete abutments and piers."[16] Work continued for the next four weeks until the bridge was completed. On June 21, 1915, the Utah County Clerk authorized the remaining $2,190 to be paid to Midland Bridge Company for completion of the Lehi Bridge.[17] In June of 1915, work was begun on a new road system on the west side of the Jordan river in order to accommodate the increased traffic generated by the new steel bridge built near Colledge Road.[18]

III. THE BRIDGE

A. DESCRIPTION

The abutments for the Jordan Narrows bridge are constructed of Portland cement mixed with the following contents: one part Portland cement, three parts sand, and five parts broken stone or gravel. This mixture was poured into four steel cylinders 48 inches in diameter, 1/4 inch thick. These abutments are twenty feet long. Four wooden piles twenty feet long were then driven into the bottom of each abutment, creating support columns sunk into the ground almost forty feet. A 60 inches by 1/4 inch piece of steel connects each pair of concrete abutments underneath the bridge.

The Jordan Narrows bridge is a single-span Pratt through truss, 120 feet long, with horizontal top and bottom chords, six panels each 20 feet long, and inclined end posts. The major structural members are riveted together. The steel I-beam members are bead welded with the word "Illinois 2" every three to four feet. The truss height from centerline to centerline of the top and bottom chords is twenty feet. The overall width of the structure is seventeen feet two inches centerline to centerline of the side hip vertical posts, with an interior clearance of sixteen feet. Channels, cover plates, and diagonal members are riveted together to form the upper chord and inclined end posts. The vertical members are I beams and diagonal tension members riveted together top and bottom to form the upper and lower chords.

The trusses are able to handle a live load of 1400 square pounds per linear foot, and the flooring system can handle a 15 ton road roller. Originally the road surface was comprised of wooden planks, 12 by 2 inches, supported by six I beams and two L beams. Currently the road surface is comprised of corrugated steel with a layer of asphalt. A safety railing is located one foot up from the road surface, comprised of 1 1/8 inch by 3/16 inch steel arranged in a diamond

mesh pattern that extends up two feet six inches. It spans the entire length of the bridge.

The Pratt through truss was a common bridge type throughout Utah during the nineteenth and early twentieth century. It was designed to span short distances when only light traffic patterns were expected. The engineering type and good condition of this bridge make it eligible for nomination to the National Register of Historic Places.

B. MODIFICATIONS

Some modifications have been made to the bridge since its construction in 1915. A new road surface composed of corrugated steel and asphalt has replaced the original wooden planks. This surface holds up better to the increased traffic demands placed on the bridge. A section of safety rail has been added to the bridge along the eastern entrance to the structure. The original safety railing has been damaged in many places from vandalism or cars hitting the railing. A weight limit sign has been added to each entrance of the bridge. A three inch utility conduit has been placed on the south side of the bridge to carry utility service to the west side of the Jordan River. This conduit lies on the bottom chord traversing the entire length.

C. OWNERSHIP AND FUTURE

The Jordan Narrows bridge was built, owned and maintained by Utah County. The bridge has been studied by RB&G Engineering of Provo, Utah on behalf of Utah County. The study indicates that this bridge is limited in its ability to safely handle future traffic flow and loads. The dangerous ninety degree entrance to the bridge has already created many accidents and one known fatality. The Jordan Narrows bridge is therefore in need of replacement. However, the bridge will remain on site to be used for pedestrian traffic.

IV. ENDNOTES

1.An Apostle is a high ranking member of the Mormon clergy.

2.Richard S. Van Wagoner, LEHI, Portraits of a Utah Town (Lehi City Corporation: Lehi City, 1990), 2.

3.Ibid.

4.Van Wagoner, 4.

5.Ezra C. Knowlton, History of Highway Development in Utah (no publication data available), 869.

6.Van Wagoner, 382.

7.Ibid, 384.

8.Richard F. Burton, The City of the Saints and Across the Rocky Mountains to California (Boulder, Colorado: University of Colorado Press, 1990), 447.

9.Utah County Commission minutes, September 10, 1993

10. Lehi Banner, September 26, 1914.

11.Ibid.

12.Utah County Commission minutes, October 19, 1914.

13.Lehi Banner, November 14, 1914.

14.Utah County Commission minutes, November 16, 1914.

15.American Fork Citizen, January 30, 1915.

16.American Fork Citizen, March 17, 1915.

17.Utah County Commission minutes, June 21, 1915.

18.American Fork Citizen, June 5, 1915.

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B. PERIODICALS

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C. NEWSPAPERS

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D. Utah County Commission Minutes, Provo, Utah.